

CLAIMS

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1. A polymer-electrolyte fuel cell, comprising:
an electrolyte membrane-electrode assembly
comprising a polymer-electrolyte membrane, and a pair of gas-
diffusion electrodes sandwiching said polymer-electrolyte
membrane;

a first electroconductive separator having a gas
channel for supplying an oxidant gas to one of the gas-
diffusion electrodes of said pair; and

a second electroconductive separator having a gas
channel for supplying a fuel gas to the other of the gas-
diffusion electrodes of said pair; wherein

the polymer-electrolyte fuel cell is characterized
in that

at least one of said first electroconductive
separator and said second electroconductive separator
comprises a metal substrate and an electroconductive resin
layer provided on said metal substrate and contacting said
electrolyte membrane-electrode assembly, and

said electroconductive resin layer comprises a resin
having water-repellant or basic radicals, and an
electroconductive particulate substance.

2. The polymer-electrolyte fuel cell in accordance
with claim 1, wherein said electroconductive particulate

substance comprises a carbon powder having a specific surface area of less than $100 \text{ m}^2/\text{g}$.

3. The polymer-electrolyte fuel cell in accordance with claim 1, wherein said electroconductive particulate substance comprises vitreous carbon.

4. The polymer-electrolyte fuel cell in accordance with claim 1, having, between said metal substrate and said electroconductive resin layer, a layer including at least one selected from the group consisting of: metallic Zn, metallic Sn, metallic Al, Cr-containing compounds, Mo-containing compounds and W-containing compounds.

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